



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/049,549

05/17/2002

Camille Borer

GK-BUE-103/500647.20004

7567

26418

7590

02/22/2007

REED SMITH, LLP

ATTN: PATENT RECORDS DEPARTMENT

599 LEXINGTON AVENUE, 29TH FLOOR

NEW YORK, NY 10022-7650

EXAMINER

BOYKIN, TERRESSA M

ART UNIT

PAPER NUMBER

1711

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

02/22/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/049,549

Applicant(s)

BORER ET AL.

Examiner

Terressa M. Boykin

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

### **Response to Arguments**

In response to applicant's argument that the references **fail to show certain features** of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim 1. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's argument that the reference(s) **does, do**, not contain the limitations on which the Applicant relies, those limitations are either *not stated in the claims and/ or are considered inherent*. Note applicants recited:

As a result of the sequence of process steps recited in the claims, the objects of the present invention are achieved: namely, a higher reactivity in the solid state polycondensation step (also known as the SSP step or post-condensing step or solid-stating step or recondensation step) which is the last step of the method recited in Claims 9 or 16 and which causes the formation of larger crystallites and improved surface crystal structure; the reliable separation of solid foreign substances from the plastic material after crystallization which may include the removal of oversized particles, in particular, the agglomerates of pellets of plastic material that may have been formed between the pelletizing step and the post-condensing step; lower power consumption and in particular, thermal power consumption, throughout the pelletizing, crystallizing and post-condensing steps.

Applicants have not satisfactorily demonstrated how the claims are not anticipated (or rendered obvious) over the reference(s). Applicant(s) are also reminded that patentability cannot be predicated upon an advantage or result that has not been satisfactorily expressly, or least implicitly, disclosed in the application as filed. Clinical Products v. Brenner, 255 F. Supp. 131, 149 U.S.P.Q. 475, 480 (D.D.C. 1966) Therefore, it is irrelevant whether the reference(s) includes (or excludes) those features or not.

Art Unit: 1711

\* Again, it would be beneficial and helpful for the applicants in order to expedite the prosecution of the case to be in position of allowability by using language from the specification or drawn directly from the examples of the specification that would clearly and further specify the claimed language without, of course, unfairly limiting applicants intended invention.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 9- 24 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 5424346 see cols 8-14.**

**US 5424346** discloses a material and process of preparing it which is an offset, that is a replacement for crystal polystyrene, sometimes known as orientable polystyrene or OPS. The material is an offset for crystal polystyrene but is composed of a polyester capable of degrading in the environment over approximately one years time. The material is a polyester, comprised of polymerized lactic acid, prepared from either D-lactic acid or L-lactic acid, and D,L-lactic acid. The ratio of the two polymerized monomer

Art Unit: 1711

units, the process treatment and in some cases certain adjuvants, determine the precise physical properties required for the exacting requirements of a crystal polystyrene offset. Thus, at approximately a ratio of 90/10, L-lactic/D,L-lactic acid, the polymerized lactic acid (PLA) is a well behaved thermoplastic that is clear, colorless, and very stiff. As such it is very suitable for preparing films, foams, and other thermoformed items of disposable or one-way plastic. Having served its purpose as a packaging plastic, the poly(lactic acid) slowly environmentally biodegrades to innocuous products when left in the environment. This harmless disappearance can help alleviate the mounting problems of plastic pollution in the environment.

Example 8 discloses a similar process as shown in Examples 4 and 5, wherein a 90/10 weight ratio copolymer of L-lactide/racemic D,L-lactide was prepared. Into a dry, nitrogen-swept, 2-liter flask was placed 1045.8 g L-lactide and 116.4 g of racemic D,L-lactide. A 1.0 ml quantity of anhydrous stannous octoate (0.2 ml per ml of toluene) solution was added. The flask was swept with nitrogen overnight, then heated in a 141 C. oil bath until the monomers are melted and well mixed, and the heating decreased slowly to 125 C. and continued for 72 hours. The polymer slowly whitens on cooling. After removing the glass, the cloudy, colorless, glassy copolymer was evaluated. Gel permeation chromatography obtains a weight-average molecular weight (M. w) of 522,000, and a number-average molecular weight (Mn) of 149,000.

A DSC of the lactide polymer reveals a strong Tm at 145 C., see FIG. 6. The lactide polymer was melted, quenched, and examined again by DSC to reveal no crystallization or melting points. However, a Tg appears at approximately 50-55 C. The results show the polymer may be crystalline or amorphous.

The reference discloses a polymeric device prepared from the same components as claimed by applicants. Any properties or characteristics inherent in the prior art, e.g. retention time, although unobserved or detected by the reference, would still anticipate the claimed invention. Note *In re Swinehart*, 169 USPQ 226. "It is elementary that the mere recitation of a newly discovered...property, inherently possessed by things in the prior art, does not cause claim drawn to those things". Since the disclosed parameters, time, temperature etc. are expressed differently, they nevertheless appear to overlap those claimed. to distinguish over the prior art. In view of the above, there appears to be no significant difference between the reference(s) and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

Art Unit: 1711

**35 USC 103**

**The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 4609721 in view of USP 4839969 see col. 1 lines 5-42, col. 2 lines 3-5, col. 4 line 16, col. 7 lines 53 through col. 8 line 68; DE 19919357 (see translation of abstract by Derwent 2000-680538 enclosed); or USP 6436322 see abstract, and col. 1 lines 5-23.**

**USP 4609721** discloses a process has now been developed for the production of a beverage bottle-grade polyethylene terephthalate (*from henceforth referred to as PET*) resin wherein a PET resin is prepared by melt polymerization under especially selected conditions which eliminate the need for a subsequent separate solid state polymerization step and which permit the molder to use typical air drying steps to upgrade the thus-produced PET chip for use in blow molding, thereby reducing the levels of moisture, acetaldehyde and acetaldehyde generation therein and increasing its intrinsic viscosity to a level advantageous for molding beverage bottles. These air drying conditions are typically at a lower temperature and of shorter duration than solid state polymerization conditions. As noted above, the reference discloses an improved process is provided for producing *polyethylene terephthalate* chip having levels of acetaldehyde content, acetaldehyde generation rate and intrinsic viscosity suitable for the molding of beverage containers after being subjected to substantially normal air drying steps at a molding plant, comprising the steps of:

(a) introducing ethylene glycol and terephthalic acid to a reactor in a ratio of about 1.05 to about 1.35 moles ethylene glycol per mole terephthalic acid and an antimony catalyst in a concentration in the range of from about 325 to about 600 parts antimony per million parts by weight of the product polymer, and heating the resulting mixture at a temperature in the range of from about 240.degree. C. to about 260.degree. C. and a pressure in the range of from about 1 to about 5 atmospheres until the acid is at least about 95 percent esterified to form an esterified monomer mixture;

(b) *melt* polymerizing the antimony-containing monomer mixture of step (a) by *heating* it in at least two stages at progressively higher temperatures in the range of about

Art Unit: 1711

270.degree. C. to about 285.degree. C. and at a reduced pressure until it becomes a molten polymer having an intrinsic viscosity of at least about 0.64 deciliters/gram;

(c) extruding the molten polymer of step (b) into a water bath for quenching, then *pelletizing* the quenched polymer so that its average individual chip volume is in the range of from about 2.3 to about 3.5 mm.<sup>sup.3</sup>; and

(d) *crystallizing the polymer pellets by heating* in air or an inert atmosphere with agitation at a temperature in the range of from about 110.degree. C. to about 160.degree. C. for a time effective to produce a degree of crystallinity in the polymer in the range from about 10 percent to less than about 30 percent.

Consequently the reference discloses a process for manufacturing crystallizable plastic material specifically a polyester and more specifically a polyethylene terephthalate employing the same process steps a,b, and c and as claimed by applicants except for the step of post-condensing or after-condensing as also referred to as in the art. However, the prior art, USP 4839969 see col. 1 lines 5-42, col. 2 lines 3-5, col. 4 line 16, col. 7 lines 53 through col. 8 line 68; DE 19919357 (see translation of abstract by Derwent 2000-680538 enclosed); or USP 6436322 see abstract, and col. 1 lines 5-23 disclose the widely known further step of post-condensing as common processing step of manufacturing PET to make compositions and articles from PET pellets, granules etc. Note:

US 4839969 relates to a drying method and apparatus, and more particularly, to a method and apparatus for use in drying polymers. One aspect of the invention particularly relates to a method and apparatus for drying crystalline polymers such as polyethylene terephthalate pellets or granules. Another aspect of the invention relates to a method and apparatus for after condensing polycondensed polymers such as polyesters and polyamides. Note col. 1, lines 5-14, Note that the apparatus or drier is especially suitable for drying crystalline polymers such as PET in palletized or granular form and for after condensing polycondensed polymers such as polyesters and polyamides because the drier enables such polymers to be dried in much shorter times than the 5 hrs. previously required in the art.

Note that the reference states that drying is often required in order to satisfactorily prepare *amorphous* or *crystalline* polymers for subsequent molding or extrusion operations. For example, polyethylene terephthalate (PET) pellets used in molding carbonated beverage bottles is typically dried prior to injection molding the parisons from which the bottles are later blown. See col. 1 lines 36-42.

DE 19919357 disclose the thermal treatment of high molecular weight polyethylene terephthalate by converting into film, crystallizing and post-condensing.

Art Unit: 1711

**USP 6436322** relates to a method for recycling polyethylene terephthalate (PET) flakes, characterized in that the flakes are extruded and granulated under vacuum, after which the granulate is after condensed in a solid phase under vacuum. The reference states that "Extrusion is preferably carried out in differentiated vent zones and after condensation of the solid phase is dependent on temperature, vacuum and time spent in a tumble dryer. Said dryer ensures the even and careful mixing and constant viscosity of the PET product. Said method is used in particular for making PET beverage bottles. Note that the reference clearly states that PET products are widely used, as beverage bottles, for high-grade sheet and fibers, and in medical supplies, especially syringes."

Consequently, since it is widely known that the polymer PET either in pellet form or granule form etc. may be further post or after-condensed to produce various articles or desired products, it would have been obvious to one having ordinary skill in the art at the time the invention was made in view of any one of the prior art above to further employ the (d) post-condensation step as claimed by applicants to the pelletized PET of the reference USP 4609721 which contains steps a, b and c, as claimed by applicants in order to produce the desired final product or article produced therefrom such as bottles, containers etc.

### **Correspondence**

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.




Art Unit: 1711

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is ( 571-272-1700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tmb

  
Examiner Terressa Boykin  
Primary Examiner  
Art Unit 1711